

## CURRICULUM VITAE

### Personal details

Surname: Lucassen  
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Working Address: Centre for Neuroscience, Swammerdam Institute for Life Sciences (SILS), University of Amsterdam, Science Park 904, Amsterdam  
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### Training

1984-1990: Free University of Amsterdam, Masters Degree in Medical Biology

1990-1995: Ph.D. at the Netherlands Institute for Brain Research, Amsterdam. PhD thesis: "The relationship between neuronal activity, brain aging and Alzheimer's disease. Approaches to investigate the "use it or lose it" hypothesis.", Promotor: Prof.Dr. D.F. Swaab (*cum laude*).

1995-1998: Post-doctoral fellow at the Division of Medical Pharmacology, Leiden University. Head: Prof. Dr. E.R. De Kloet.

1998- 2004: Assistant Professor at Center for Neuroscience, Swammerdam Institute for life Sciences, University of Amsterdam, head: Prof.Dr. M. Joëls.

2004- 2010: appointed Associate Professor at the SILS-CNS.

2008: Appointed Visiting Professor at Wuhan University, China.

2009- 2011: Acting head and interim group leader at SILS-CNS, UVA.

2011: appointed Full Professor of Structural and Functional Plasticity at SILS-CNS, UvA.

### Miscellaneous;

- Chairman of the Scientific Advisory board of the Internationale Stichting Alzheimer Onderzoek ISAO from 2009- present.

### Honours / Awards

- ORGANON Prize for Endocrinology 1997

- Honorary Professor at Tongji Medical College, Wuhan University, China, 2008.

## **Main domain of research:**

Structural and functional plasticity in relation to (early) stress, cognition and diseases like depression and dementia.

## Central research questions:

- How are stress and corticosteroids implicated in the modulation of structural plasticity and neuronal viability in the adult hippocampus ?
- What is the functional relevance and consequences of such dynamic structural alterations, i.e. neurogenesis and apoptosis, ongoing in the adult brain?
- How do the adult generated cells (causally) contribute to learning and memory?
- To what extent are these structural-dynamic changes implicated in disorders affecting the hippocampus, like Alzheimer's disease and depression?
- Do early life stressors influence neurogenesis for life and thereby increase the vulnerability to develop hippocampal related disorders like depression and dementia ?
- How are such changes mediated ? Are epigenetic mechanisms or changes in microRNA implicated ?

## Group members;

- Dr. Harm Krugers (synaptic plasticity, emotional memory, stress, AMPA receptors)
- Dr. Carlos Fitzsimons (stress, viral/molecular modulation of neurogenesis, microRNA)
- Dr. Aniko Korosi (early life stress, epigenetics, neurogenesis, nutrition)
- Dr. R. De Heus (education)
- Prof.Dr. MS Oitzl, special chair
- 2 post-docs, 2 technicians,
- 9 Ph D students, 3 international guests

See; <http://sils.uva.nl/sfpns> for more information

- Ad hoc journal reviewer for a.o.:

SCIENCE, Nature Neuroscience, Brain, PNAS, J Neurosci, Biological Psychiatry, Progress in Neurobiology, Brain Res, Neurosci Letters, Journal Affective disorders, Genes, brain & Behav, Expert Opinion On Drug Discovery, Journal of Alzheimer's disease, Neuroscience, Epilepsia, Psychopharmacology, Expert Opinion On Therapeutic Targets, Eur J Neurosci, J Psych Res, PLOS One, J Neurosci Res, Psychopharmacology, J. Comp Neurol. PsychoNeuroEndocrinology, Molecular Medicine.

(average of 25 manuscripts/year).

- Invited Grant Proposal reviewer for:

National: HersenStichting Nederland, NWO Programma- and projectsubsidie, NWO International collaborative proposal, NWO TALENT, NWO Horizon, NWO ASPASIA, NWO VENI scholarship

International: US Alzheimer's Association, Int Stichting Alzheimer Onderzoek ISAO, Alzheimer Research Forschung, Welcome Trust UK, BBSRC, Health Research Council New Zealand, Israely Science Foundation, Auckland Medical Research Foundation, New Zealand, Neurological Foundation New Zealand, Marsden Fund New Zealand Research Council, Ontario Mental Health Foundation Canada, l'Agence Nationale de la Recherche (ANR), MRC grant UK.

(average of 8 grant reviews per year)

- Average of 10 invited lectures per year at various national and international laboratories and institutes.

- Over 170 lectures at various national and international meetings, 175 published abstracts, 119 posters at (inter)national meetings).

**Selected key publications, out of a total of >121 peer-reviewed papers and 22 book chapters.**

1. Perry G, Nunomura A, Lucassen P, Lassmann H, Smith MA. Apoptosis and Alzheimer's disease. *Science* 282 (1998) 1268-69.
2. PJ Lucassen, M Muller, F Holsboer, J Bauer, A Holtrop, J Wouda, ER De Kloet and DF Swaab. Hippocampal apoptosis in major depression is a minor event and absent from subareas predicted to be at risk for glucocorticoid overexposure, *Am J Path.*, vol 158; p 453-468, 2001.
3. Heine, VM, Suharti Maslam, Marian Joëls and Paul J. Lucassen. Prominent decline of newborn cell proliferation, differentiation and apoptosis in the aging dentate gyrus. *Neurobiol. Aging*, 25 (2004) 361–375.
4. Paul J. Lucassen, Eberhard Fuchs and Boldizsár Czéh. Antidepressant treatment with tianeptine reduces apoptosis in the tree shrew hippocampal dentate gyrus and temporal cortex. *Biological Psychiatry*, 55 (2004):789–796.
5. D.F. Swaab, A. Bao and P.J. Lucassen. The stress system in the human brain in depression and neurodegeneration. *Aging Research Reviews*, Vol 4; p 141-194, 2005.
6. Karin Boekhoorn, Marian Joels and Paul J. Lucassen. Increased proliferation reflects glial and vascular-associated changes, but not neurogenesis in the presenile Alzheimer hippocampus. *Neurobiology of Disease*, 2006; 24(1):1-14.
7. Boekhoorn K, Terwel D, Biemans B, Borghgraef P, Krugers H, Wiegert O, Ramakers GJ, Joels M, Van Leuven F and Lucassen PJ. Improved LTP and memory in tau-P301L transgenic mice before onset of hyperphosphorylation and tauopathy. *J Neurosci* 2006; 26(13):3514-3523.
8. Kristina Sennvik\*, Karin Boekhoorn\*, Reena Lasrado\*, Dick Terwel, Steven Verhaeghe, Hubert Korr, Christoph Schmitz, Takami Tomiyama, Hiroshi Mori, Harm Krugers, Marian Joels, Hana Dawson, Ger J.A. Ramakers, Paul J. Lucassen and Fred Van Leuven. Tau-4R suppresses proliferation and promotes neuronal differentiation in the hippocampus of tau knockin/knockout mice. *FASEB J.* 2007; 21(9):2149-61.
9. R.W.H. Verwer, A.A. Sluiter, R.A. Balesar, J.C. Baayen, D.P. Noske, C.M.F. Dirven, J. Wouda, A.M. van Dam, P.J. Lucassen, D.F. Swaab. (2007) Mature astrocytes in the adult human neocortex express the early neuronal marker doublecortin. *Brain* 130, 3321-3335
10. Joëls M, Henk Karst, Harmen J Krugers and Paul J Lucassen. Chronic stress: Implications for neuron morphology, function and neurogenesis. *Front Neuroendocrinol.* 2007; 28(2-3):72-96.
11. Boldizsar Czéh and Paul J. Lucassen. What causes the hippocampal volume decrease in depression? Are neurogenesis, glial changes and apoptosis implicated? *Eur. Arch. Gen Psy. & Clin. Neurosci.*, 257 (5): 250-60, 2007.
12. Michael W. Marlatt, Paul J. Lucassen, George Perry, Mark A. Smith and Xiongwei Zhu. Alzheimer's Disease: Cerebrovascular Dysfunction, Oxidative stress, and Advanced Clinical Therapies. *Journal of Alzheimer's Disease* vol 15, 199-210, 2008.
13. Goran Simic, Mihovil Mladinov, Natasa Jovanov-Milosevic, Atiqul Islam, Alen Pajtak, Jadranka Sertic, Paul J. Lucassen, Patrick R. Hof, Bozo Kruslin. Abnormal motoneuron migration, differentiation, and axon outgrowth in spinal muscular atrophy. *Acta Neuropathol*, 115(3):313-26, 2008

14. PJ Lucassen, (.), JR Seckl and ID Neumann. Prenatal stress reduces postnatal neurogenesis in rats selectively bred for high, but not low anxiety: possible key role of lack of induction of placental 11 $\beta$ -hydroxysteroid dehydrogenase type 2. *Eur. J. Neurosci.*, 29; 97-103, 2009.
15. Michael W. Marlatt and Paul J. Lucassen. Neurogenesis and Dementia: Biology and Pathophysiology in Mice and Men. *Current Alzheimer Research* Vol. 7(2), p. 113-125, 2010.
16. PJ Lucassen, P Meerlo, AS Naylor, AM van Dam, AG Dayer, E Fuchs, CA Oomen, B Czeh. Regulation of neurogenesis by stress, sleep, exercise and inflammation; implications for depression and antidepressant action. *European NeuroPsychoPharmacol.* 20 -1, 2010, 1-17.
17. PJ Lucassen, MW Stumpel, Q Wang, E Aronica. Decreased numbers of progenitor cells but no response to antidepressant drugs in the hippocampus of elderly depressed patients. *Neuropharmacology*, 58 (2010) 940-949.
18. CA Oomen, H Soeters, N Audureau, L Vermunt, F van Hasselt, M Joëls, PJ Lucassen\* and H Krugers\*. Reduced neurogenesis and altered cellular morphology after early maternal deprivation is paralleled by impaired water maze acquisition but increases in fear memory in the adult male rat. *Journal of Neuroscience* 2010; 30, 6635-6645.
19. Harm J Krugers, Paul J Lucassen, Henk Karst and Marian Joëls. Chronic stress, hippocampal structure and synaptic function: relevance of (anti)glucocorticoids. *Frontiers in Synaptic Neuroscience*. Juli 2010 doi: 10.3389/fnsyn.2010.00024.
20. Paula van Tijn, Willem Kamphuis, MW Marlatt, Elly M. Hol, Paul J. Lucassen. Presenilin mouse and zebrafish models for dementia: Focus on neurogenesis. *Progress in Neurobiology*, Volume 93, Issue 2, February 2011, Pages 149-164.
21. MW Marlatt, I Philippens, E Manders, B Czeh, M Joels, H Krugers, PJ Lucassen. Distinct structural plasticity in the hippocampus and amygdala of the middle-aged common marmoset (*Callithrix jacchus*). *Experimental Neurology*, 230 (2011) 291–301, 2011.
22. Van Bokhoven P, Oomen CA, Hoogendijk WJG, Smit AB, Lucassen PJ\* and Spijker, S\*. Reduction in hippocampal neurogenesis after social defeat is long-lasting and responsive to late antidepressant treatment. *Eur J Neurosci.* 2011 33(10): 1833-1840 ('EJN featured article').
23. I. Oliver Wirths, T Bethge, A Marcello, A Harmeier, S Jawahr, Paul J. Lucassen, Gerd Multhaup, David Brody, Thomas Esparza, M Ingelsson, H Kalimo, Lars Lannfelt and Thomas A. Bayer. Pyroglutamate Abeta pathology in APP/PS1KI mice, sporadic and familial Alzheimer's disease cases. *Journal Neural Transmission* 117: 85–96, 2010.
24. DZ Christensen, (.), PJ Lucassen, TA Bayer, O Wirths. Accumulation of intraneuronal beta-amyloid correlates with ApoE4 genotype. *Acta Neuropathol.*, 119(5):555-6, 2010.
25. Marijke A.M. Lemmens, Annerieke S.R. Sierksma, Bart P.F. Rutten, Frank Dennissen, Harry W.M. Steinbusch, Paul J. Lucassen\* and Christoph Schmitz\* (shared last authors) Age-related changes of neuron numbers in the frontal cortex of a transgenic mouse model of Alzheimer's disease, *Brain Structure and Function*, 216 (3): 227-37, 2011
26. R Eendebak, PJ Lucassen and CP Fitzsimons. Nuclear Receptors and microRNAs: Who regulates the regulators? *FEBS letters*, volume 585, issue 5, 2011, pp. 717 - 722.
27. Datson NA, Speksnijder N, Mayer JL, Steenbergen PJ, Korobko O, Goeman J, de Kloet ER, Joëls M, Lucassen PJ. The transcriptional response to chronic stress and glucocorticoid receptor blockade in the hippocampal dentate gyrus. *Hippocampus*. 2012 Feb;22(2):359-71

28. Marlatt MW, Potter MC, Lucassen PJ, van Praag H. Running throughout middle-age improves memory function, hippocampal neurogenesis and BDNF levels in female C57Bl/6J mice. *Dev Neurobiol.* 2012 Jan 17. doi: 10.1002/dneu.22009.
29. Krugers HJ, Oomen CA, Gumbs M, Li M, Velzing EH, Joels M, Lucassen PJ. Maternal deprivation and dendritic complexity in the basolateral amygdala. *Neuropharmacology* 2012; 62(1):534-7.
30. Xin-Rui Qi, Willem Kamphuis, Qian Wang, Paul J. Lucassen, Jiang-Ning Zhou, Dick F. Swaab. Aberrant stress hormone receptor balance in the human prefrontal cortex and hypothalamic paraventricular nucleus of depressed patients. *Psychoneuroendocrinology.* 2012 Nov 5. doi:pii: S0306-4530(12)00330-7 2012.
31. Schouten M, Buijink MR, Lucassen PJ, Fitzsimons CP. New Neurons in Aging Brains: Molecular Control by Small Non-Coding RNAs. *Front Neurosci.* 2012;6:25.
32. Paul J. Lucassen, Carlos P. Fitzsimons, Aniko Korosi, Marian Joels, Catherine Belzung and D. Nora Abrous. Stressing new neurons into depression? *Molecular Psychiatry*, 2012 May 1. doi: 10.1038/mp.2012.39, 2012.
33. KJ Doorn, PJ Lucassen, HW Boddeke, M Prins, HW Berendse, B Drukarch and AM van Dam. Microglial activation in various brain regions involved in Parkinson's disease. *Progress in Neurobiology* 98 (2012) 222–238
34. C.P. Fitzsimons, L.W.A. van Hooijdonk, I. Zalachoras, M. Schouten, V. Brinks, T. Zheng, T.G. Schouten, D.J. Saaltink, T. Dijkmans, D.A. Steindler, J. Verhaagen, F.J. Verbeek, P.J. Lucassen, E.R. de Kloet, O.C. Meijer, H. Karst, M. Joels, M.S. Oitzl and E. Vreugdenhil. Knockdown of the Glucocorticoid Receptor in Newborn Neurons Alters their Integration in the Adult Hippocampus and Impairs Fear-Learning. *Mol. Psychiatry*, in press, 2012
35. P Hu, C Oomen, AM van Dam, J Wester, JN Zhou, M Joëls and PJ Lucassen. A single-day treatment with mifepristone is sufficient to normalize chronic glucocorticoid treatment induced suppression of rat hippocampal cell proliferation. *PLoS ONE* 7(9): e46224. doi:10.1371.
36. Q Wang, J Van Heerikhuize, L Seress, E Aronica, M Joels, DF Swaab, PJ Lucassen. Glucocorticoid receptor expression in the human hippocampus; stability with age. *Neurobiol. Aging*, 2013 Jan 3. doi:pii: S0197-4580(12)00596-9..
37. Paul J. Lucassen, Eva F.G. Naninck, Johannes B. van Goudoever, Carlos Fitzsimons, Marian Joels and Aniko Korosi. Perinatal programming of hippocampal structure and function; emerging roles of stress, neurogenesis, epigenetics and early nutrition. *Trends in Neurosciences*, in press, 2013.

**H-factor: 36 (Jan 2013). > 4000 citations.**